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## Study of fetomaternal outcome of teenage pregnancy in a tertiary care hospital

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### Abstract

**Background:** The objective is to study the fetomaternal outcome in teenage pregnancy at Government Maternity Hospital, S V Medical College, Tirupathi for the study period of 1 year from June 2021 to May 2022. Teenage pregnancy is a worldwide health problem. WHO defined adolescence as the period from 10-19 years? It is a serious health problem in a developing country like India. Teenage pregnancy is associated with high risk of prematurity, low birthweight, preeclampsia and anaemia.

**Methods:** It is a retrospective study conducted in a tertiary care hospital at GMH, SVMC, Tirupathi over a period of 1 year. 1325 teenage pregnant women were included in the study out of 12992 pregnant women admitted for delivery during the study period.

**Results:** Study showed the incidence of teenage pregnancies as 10.1%. Among these teenage pregnant women 87% had anemia, 21.6% had gestational hypertension, 7% had eclampsia, 6% had intrauterine death and malpresentations were noted in 4%. Intrapartum complications noted in the study are preterm labor (41.9%), cephalopelvic disproportion(25.8%), fetal distress(22.4%) and obstructed labor(0.3%). 52 cases were complicated with postpartum hemorrhage, 2 with puerperal sepsis and 6 with retained placenta. 2 cases of maternal deaths occurred due to antepartum eclampsia and pulmonary edema. LSCS rate was 27%, 65.9% had normal vaginal deliveries and 11.9% had instrumental deliveries. Among the total births 57.8% were low birth weight.

**Conclusions:** Teenage pregnancy is associated with increased incidence of anemia, pre-eclampsia, eclampsia, preterm delivery, instrumental delivery, low birth weight and perinatal death. The healthcare provider should consider teenage pregnancy as high risk pregnancy and should emphasise for more number of antenatal visits to identify the risk as early as possible.

**Keywords:** Adolescent, anaemia, eclampsia, pre-eclampsia, teenage pregnancy

### Introduction

Teenage pregnancy is a worldwide health problem. WHO defined teenage pregnancy as any pregnancy from a girl who is 10 to 19 years of age, age being defined as her age at the time of delivery [1]. According to National family health survey-4 2015-2016 revealed that incidence of teenage pregnancy in India were 7.9% [2]. India has successfully reduced the proportion of teenage pregnancy which was 16% during the NFHS-3 in 2005-2006 and it was 7.9% during NFHS-4 2015-2016. Highest prevalence seen in Bihar, West Bengal, Jharkhand, Rajasthan, Assam, Maharashtra, Madhya Pradesh, Gujarat, Tripura Andhra Pradesh, Uttar Pradesh, Telangana, Karnataka, Odisha. Incidence to teenage pregnancy in India is 2 women out of 1000 pregnancies. If pregnancy occurs during teenage period nutrition must suffice the growth of the mother in addition to the baby. The outcomes were influenced by this biological immaturity, unintended pregnancy, inadequate perinatal care, poor maternal nutrition and stress. The outcomes are more adverse in the lower teenage group of 13-15 years than in the higher teenage group of 16 to 19 years [3]. The combination of poor nutrition and early child bearing expose young women to serious health problems during pregnancy and child birth, including damage to the reproductive tract, pregnancy related complications like anaemia, preeclampsia, eclampsia, preterm labour, cephalon pelvic disproportion, low birth weight [4, 5]. Adolescents face barriers to access contraceptive devices because of inadequate sexual health.

### WHO guidelines in 2011 on preventing adolescent pregnancies, 6 main objectives [6]:

1. Decreasing marriage before the age of 18 years.
2. Creating understanding and support to reduce pregnancy before the age of 20 years.
3. Increasing the use of contraception.

4. Reducing coerced sex among adolescents.
5. Reducing unsafe abortion among adolescents.
6. Increasing use of skilled antenatal, child birth and postnatal care among adolescents.

### Materials and Methods

This prospective study was conducted at Government Maternity Hospital, Tirupati, Andhra Pradesh in the Department of Obstetrics and Gynaecology. The period of study was for 1 year between June 2021 to May 2022. All teenage pregnant women admitted were included in the study and required details were collected on a proforma by taking history and following up the patient from admission to delivery. MS Excel was used for statistical purpose.

### Results

During the one-year study period from June 2021 to May 2022, 12992 pregnant women were admitted in our hospital for delivery and abortions. Out of this teenage pregnant women were 1325. Hence proportion of teenage pregnancies were 10.1%. 85.6% of the teenage mothers were primi gravida, 13.4% second and 0.9% third gravida respectively.

Anemia (87%) is the most common antepartum complication noted in study followed by gestational hypertension (21.6%), eclampsia (7%), intrauterine death (6%) and malpresentation (4%). The intrapartum complications noted in study include preterm labour (41.9%), Cephalopelvic disproportion (25.8%), fetal distress (22.4%) and obstructed labour (0.3%). Among the total teenage pregnancy 2 cases of maternal deaths were reported due to antepartum eclampsia and pulmonary edema.

Out of the total 1325 teenage deliveries conducted, 65.9% were normal vaginal delivery, 11.9% instrumental delivery with most common indication being failed maternal efforts and fetal distress and caesarean section rate was 27%. 52 cases were complicated with postpartum hemorrhage, 2 with puerperal sepsis and 6 with retained placenta.

The total number of babies born were 1325, that is 1274 live birth and 51 still births. Out of the total births 41.9% had birth weight > 2.5 kg and 40.9% between 2-2.5 kg and 16.9% below 2 kg. According to 1 minute APGAR scoring after birth, 1041 babies had 8-10, 198 had 6-8, 24 had 4-6 and 62 had < 4 score.

### Discussion

Teenage pregnancy is a serious challenge for the health care system and a burden for the social infrastructure. In present study the incidence of teenage pregnancy at our hospital was 10.1% (table 1) which was high when compared with national incidence 7.9%. At GMH, SVMC, Tirupathi 1135 (85.6%) of pregnant adolescents were primigravida, 178 (13.4%) were second gravid, 12 (0.9%) were third gravida. (Table 2) Higher incidence was found in primigravida.

According to NFHS-4 Data the prevalence of child marriage amongst 15-19 years was 11.9% and in rural it was 14.1% and urban areas 6.9%. Most child marriages result in teenage pregnancy due to societal pressure and lack of sexual and reproductive health knowledge. 27.3% married teenage girls have given birth to one child and 4.2% have 2 or more children.

In present study anaemia (87%) was found to be most common antepartum complication. (Table 4) This may be due to inadequate nutrition due to poor eating habits which is common in adolescents. Severe anaemia leads to preterm labour, low birthweight, postpartum hemorrhage and sepsis. Anaemia contributes to 20% of all maternal deaths. Iron deficiency anaemia is one of the most common causes of anaemia during pregnancy that can be corrected by proper diet and oral iron

supplementation [7].

Gestational hypertension (21.6%) and eclampsia (7%) occurred in present study group. (Table 4) There is high incidence of PIH and eclampsia in adolescent pregnancy. It is the most common complication of pregnancy amongst women having their first child and is therefore a common complication for many adolescent mothers [8].

Teenage mothers should be counselled to have regular antenatal check-ups for early detection of complications related to both mother and fetus. Adequate antenatal, intrapartum and postpartum as well as neonatal care can minimize the risk associated with childbirth and its effect on maternal and child health. Preterm labour occurred (41.9%) in present study group which shows higher incidence. (Table 4) Bhalerao A et al., and Chahande MS have reported association between higher incidence of preterm labour in teenage pregnancy [9, 10].

In present study the adolescent pregnant women delivered by normal vaginal delivery were 874 (65.9%) and lower segment caesarean section were 359 (27%). (Table 6) There is no much difference between caesarean delivery rates in present study. Opinions on mode of delivery by operative interventions in teenage pregnancy differed widely. Al-Ramahi et al. reported that because of CPD there is higher rate of operative interventions and instrumental deliveries [11, 12]. But in present study there is no such higher incidence of LSCS and instrumental deliveries as compared with Eure CR e al, who reported lower rates of operative interventions [13].

Low birth weight (57.8%) (Table 9) and preterm babies (41.9%) and neonatal complications are more common in adolescent pregnancy [14, 15]. Prianka M et al. have the similar incidence of 38.9% of low-birth-weight babies in adolescent pregnancy. Low birthweight is a key indicator of malnutrition and important determinant of child mortality.

In the present study 2 cases of maternal deaths were noted due to antepartum eclampsia and pulmonary edema. (Table 11)

**Table 1:** Incidence of teenage pregnancy

Total number of obstetric admissions	Total number of teenage pregnancies	Percentage
12992	1325	10.1

**Table 2:** Incidence of teenage pregnancy according to parity

Gravida	Number	Percentage
Primi	1135	85.6
Second gravida	178	13.4
Third gravida	12	0.9

**Table 3:** First trimester complications in teenage mothers

First trimester complications	Number of mothers	Percentage
Hyperemesis gravidarum	102	7.6
Vesicular mole	6	0.4
Abortions	92	6.9
Ectopic pregnancy	12	0.9

**Table 4:** Antepartum complications in teenage pregnancy

Type of complication	Number of cases	Percentage
Anemia	1153	87
Gestational hypertension	287	21.6
Eclampsia	101	7
Abruptio placenta	9	0.6
Intra uterine death	92	6
Malpresentations	54	4

**Table 5:** Intrapartum complications in teenage pregnancy

Type of complication	Number of mothers	Percentage
Preterm labor	556	41.9
CPD	342	25.8
Fetal distress	298	22.4
Obstructed labor	5	0.3

**Table 6:** Outcome of teenage pregnancy

Mode of delivery	Number	Percentage
Normal vaginal delivery	874	65.9
Instrumental delivery	92	11.9
Caesarean delivery	359	27

**Table 7:** Postpartum complications of teenage pregnancy

Type of complication	Number	Percentage
Postpartum hemorrhage	52	3.9
Puerperal sepsis	2	0.15
Retained placenta	6	0.45

**Table 8:** Neonatal outcome of teenage pregnancy

Outcome	Number	Percentage
Live births	1274	96.2
Still births	50	3.8

**Table 9:** Fetal outcome in teenage pregnancy according to birth weight

Birth weight (kg)	Number	Percentage
>2.5	556	41.9
2-2.5	542	40.9
<2	225	16.9

**Table 10:** Fetal outcome in teenage pregnancy according to 1 minute APGAR Scores

APGAR score at 1 minute	Number	Percentage
8-10	1041	78.5
6-8	198	14.9
4-6	24	1.8
<4	62	4.6

**Table 11:** Maternal deaths in teenage pregnancy

Total number of teenage mothers	Maternal deaths
1325	2

**Conclusion**

The present study aimed to evaluate the outcomes and complications of teenage pregnancy. It was concluded from the present study that preterm labor, hypertensive disorder of pregnancy and premature rupture of membranes and anemia are major maternal complications. Intrauterine growth retardation, low birth weight, stillbirth were the major fetal complications. The healthcare provider should consider teenage pregnancy as high-risk pregnancy and should emphasise for a greater number of antenatal visits to identify the risk as early as possible. Prevention of teenage pregnancy can only be achieved by education of girl child, marriage at legal age and prevention of unwanted pregnancy along with proper health and life skill education to both boys and girls. School based sexual awareness classes are needed that will provide student with knowledge about pregnancy, contraception and sexually transmitted diseases.

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Not available

**Conflict of Interest**

Not available

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